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PATENT  
YOR919960049XB

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	:	Marie Angelopoulos, et al.
Serial Number	:	09/346,353
Filing Date	:	July 2, 1999
Examiner	:	T. Yoon
Group Art Unit	:	1714
For	:	METHODS OF FABRICATING PLASTICIZED, ANTIPLASTICIZED AND CRYSTALLINE CONDUCTING POLYMERS AND PRECURSORS THEREOF

The Honorable Assistant Commissioner of Patents  
Post Office Box 1450  
Alexandria, VA 22313-1450

In response to the Official Action dated December 13, 2006, please amend the Claims as set forth in Appendix A attached hereto.

**REMARKS**

Applicants submit a new page 8 with the language referring to the Figures suggested by the Examiner.

Applicants have amended the claims to include reference to "conjugated dienes" as a means of distinguishing the claims over the prior art. The basis for this language is found in the specification on page 2, line 6. The Examiner previously rejected this language asserting that there was no basis in the specification for the language. Page 2, line 6 unequivocally states: " These polymers (i.e., those defined in Claim 9 of the application)

are conjugated systems which are made electrically conductive by doping." The claims now incorporate specific compounds for polymer, solvent and additive.

Pursuant to the Examiners comments in the Official Action noted above, Applicants have added the following language to Claim 1 and inherently all of the claims dependent thereon:

The doping step is embodied in the language: "*said doping reaction consisting of exposing said conjugated diene polymer to an acid-containing solution selected from the group consisting of hydrochloric acid, methanesulfonic acid, camphorsulfonic acid and acrylamidopropanesulfonic acid.*" The bases for this language is found in the specification on page 10, lines 14 - 18 and page 18, lines 2 and 9.

The forming of a film is defined as being performed "*via a technique selected from the group consisting of spin-coating or solution casting from said admixture, said resulting film possessing isotropic conductivity.*" The basis for this language is found in the specification on page 18, lines 13 and 14.

The Examiner has rejected claims under 35 U.S.C. §102(b) as anticipated by or in the alternative 35 U.S.C. §103(a) as obvious over Han (US 5,171,478) or Ikkala et al. (US 5,520,852).

Claim 11 has been amended to read: 11. "The method defined in Claim 1 wherein said method consists of a conjugated polymer which is polyaniline which is a substantially crystalline material which is dissolved in a solvent consisting of NMP to form a solution exhibiting bimodal or trimodal distribution in Gel Permeation Chromatography (GPC) as a result of aggregation induced by internal hydrogen bonding between chains in said polyaniline and exhibiting the GPC curve depicted in Figure 4, and said additive is 5% by weight poly-co-dimethyl propylamine siloxane. Applicants have limited the solvent to only NMP by use of the term "consisting of." It is thus NOT the same solvent.

In support of the assertion that the solvents used in the polyaniline systems are in fact different, the Examiner is directed to Column 18, lines 54 - 60 which disclose that there are degrees of solubility as set forth therein. Based upon Ikkala, one cannot infer that the properties are inherent.

Applicants do use the poly-co-dimethyl propylamine siloxane and obtain a synergistic result as demonstrated in the data presented in Figures 7 - 10. The results in the Figures demonstrate that the resultant properties of the product formed is substantively different from that. In view of the unexpected properties demonstrated in the specification, filed under oath, these results are conclusive.

Ikkala does not disclose the elements of Applicants' Claim 11 as presently written, so it does not anticipate same. There is no suggestion in Ikkala that would render Claim 11 to one skilled in the art.

Applicants again respectfully submit that it is improper for a rejection of the claims in this application under 35 U.S.C. §103(a) based upon "inherency." The Court of Appeals for the Federal Circuit has clearly stated the standard which applies to the examination of applications for Letters Patent in holding:

*"[A] retrospective view of inherency is not a substitute for some teaching or suggestion which supports the selection and use of the various elements in the particular claimed combination."* In re Newell, 897 F.2d 899 13 USPQ2d 1056 (Fed. Cir. 1990).

There is no disclosure in Han which meets each and every element of the excerpt of Claim 1 as set forth above; and, the assertion of inherency is improper.

The Examiner has rejected claims 1, 3-7, 9-11, 14-16, 20, 22-25 and 40-42 under 35 U.S.C. §102(b) as anticipated by or in the alternative 35 U.S.C. §103(a) as obvious over Han (US 5,171,478).

The remarks set forth above with respect to the rejection of Claim 11 are hereby incorporated by reference with respect to the above-noted rejection. The data disclosed in the drawings supports the conclusion that the present invention is different in kind as opposed to difference in degree with respect to Han.

The Examiner is respectfully requested to reconsider his rejection of claims 1, 3-7, 9-11, 14-16, 20, 22-25 and 40-42 under 35 U.S.C. §102(b) as anticipated by, or in the alternative, 35 U.S.C. §103(a) as obvious over Han (US 5,171,478) in view of Cao, et al. (5,232,631)

The remarks relating to the Han reference are again incorporated by reference herein as to this rejection. There is no suggestion in Han that would lead the skilled artisan to attempt to orient a film made by a different process such as the ones disclosed in Han and Cao.

The Examiner has commented on Example 6 pointing to where Han teaches stretch orientation and contends that Han teaches the use of a plasticizer and a solvent. The Examiner has totally ignored the rest of the limitations in Applicants' claims as now written, for which there is no teaching or suggestions in Han. Applicants' claims distinguish over Han and Cao, et al. in that Applicants now include limitations which are not found in Han which render the subject matter patentable.

For the sake of accuracy, Example 6 of Han states:

*"Green conductive poly(anilinium tosylate) powders (5 g) was prepared as in Example 3, and was suspended in 35 mL of N-methyl pyrrolidinone..."*

Applicants respectfully point out at this point of the Han Disclosure that Han clearly states that the aforementioned powder is SUSPENDED in the NMP. This is contrary to what Applicants have disclosed and claimed, i.e. the polymer is DISSOLVED in the NMP solution. It is only "After the addition of 3.3 g of tripropylamine, the suspended

*poly(anilinium tosylate) powder started to dissolve forming a blue solution of low viscosity (water-like viscosity)..."* Applicants use only NMP as the solvent to put the polymer into solution.

As stated above, there is no teaching of, suggestion for or motivation for Applicants' invention as now claimed and thus there is no showing of *prima facie* obviousness. there is no rejection in the record based upon inherency, and inherency can not support an obviousness rejection, since what is inherent in a reference is not taught by the reference.

Finally, The Examiner rejected claims under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Elsenbaumer (U.S. 4,983,322). Elsenbaumer discloses a method of using a solution to form a conducting polymer. He discloses polyaniline in combination with an oxidizing dopant. He illustrates the useful dopants by disclosing a list of compounds, a substantial number of which are halogen-containing compounds. His preferred dopants are chlorine and bromine-containing compounds with the most preferred dopant being FeCl<sub>3</sub>. Elsenbaumer uses his dopant to modify the electrical properties of the polymer. This is an inherent difference in kind as compared with the present invention. Appellants have emphasized in the specification (page 11) that the morphology of a polymer is very important in determining the polymer's physical, mechanical and electronic properties.

Applicants specifically state that prior art polyaniline base films of the type disclosed by Applicants have obtained an unexpected benefit as a result of their discovery that the additive provides local mobility to the polymer to allow the polymer chains to associate

tightly with one another to achieve a high crystalline state.

Applicants have provided experimental data (under oath) that clearly establishes and supports the necessary difference in kind rather than degree of the oxidant that they use as opposed to the dopant of Elsenbaumer under similar conditions. The preferred  $\text{FeCl}_3$  species in solution of Elsenbaumer provides the  $\text{Cl}^-$  ions analogous to the  $\text{HCl}$  used by Appellants in their comparative evaluation. The enhanced crystallinity (one of the objects of the invention) enhances the electrical properties and renders the Applicants' invention an unexpected improvement.

As noted above, it is improper to reject the claims as now amended in view of Elsenbaumer using an "inherency" assertion under 35 U.S.C. §103(a). The remarks relating to difference in kind versus degree which are presented with respect to the Han reference are incorporated by reference with respect to the Elsenbaumer reference.

For the Examiner to properly make the assertions on concerning "Inherency" that he has on the record with respect to rejecting the Applicants' claims over Cao, Han, Ikkala and Elsenbaumer, he is obligated to produce specific support for his assertions as to patentability or an Affidavit as provided for under 37 C.F.R. 104(d)(2) for the Examiner to qualify himself as an expert to make these statements.

Please address all future correspondence relating to this application to the undersigned at 6136 West Kimberly Way, Glendale, AZ 85308-7627

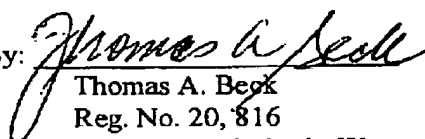
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The Commissioner is requested to grant a 3 month extension of time within which to respond to the Office Action noted above. A check for \$1020.00 to cover the cost of the extension fee is enclosed.

Respectfully submitted,

By:



Thomas A. Beck

Reg. No. 20,816

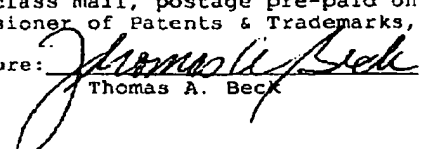
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Signature:

Name:

  
Thomas A. Beck

Date: June 13, 2007

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The PTO did not receive the following  
listed item(s) NO CHECK

**Application Serial Number 09/346,353**

**Revised page 8**

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